PATTERNS OF POWER

The Furniture in the Room

Why the Same Human Material Produced Liberty in One Place and Industry in Another and Neither in a Third — How the Counterweights a Ruler Cannot Own Decide Where a People's Talent Is Allowed to Go, How Their Foreclosure Stores the Pressure and Reloads the Cage, and Why a Thousand-Year Lead That Reverses Inside a Single Lifetime Shows the Difference Was Never in the Blood

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with Claude (Anthropic)

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A Note on This Collaboration

This study is one product of an ongoing collaboration, and the division of labour behind it is real enough to be worth stating, because neither half would have produced the work alone. The framework is Thomas J. Bryan's, and so is the pattern this volume chases: the conviction, offered in dialogue with his habitual disclaimer that he states no fixed theory but only patterns he notices and questions he cannot put down, that no people is superior to another, that brilliant minds appear everywhere in roughly equal measure, and that what differs between societies is not the human material but the room it was raised in — the furniture it inherited and the lines of thought it institutionally rewarded and celebrated. The research, the verification of every load-bearing date and figure against the scholarship, the historical reconstruction, the placement of the argument against the work of the economic historians, and the prose are Claude's (Anthropic), developed in the same dialogue. The discipline the volume tries hardest to keep — to test the thesis rather than flatter it, to state in advance what would defeat it, and to hold the strongest version of the opposing case — is jointly held, and it applies, by design, to the volume's own argument as much as to the ones it examines.

The Argument in Eight Parts

PART I · The Question and the Answer That Flatters How two transformations that remade the species clustered in one corner of the world, why the most natural explanation for that clustering is also the most dangerous, and what a structural account would have to do to earn belief

PART II · The Instrument — People in Positions The mechanism the rest of the volume runs on, stated for a reader who has never met it: how a person decides with the materials at hand, how what they were formed to value sets the price of every choice, how cost counts only where someone can enforce it, and the three structural facts those simple rules expose

PART III · Where the Talent Is Allowed to Go The first divergence examined through the channel: how China's examination absorbed its ablest minds for thirteen centuries, how the Islamic world's great age of inquiry was redirected by an institution rather than ended by a defeat, how England built a channel that pointed talent at the natural world and crowned it, and a living case in which one population runs two channels at once

PART IV · The Price of a Machine Why accumulated knowledge does not become an industrial revolution until the prices make a machine worth building, the scholars who locate the cause in wages and coal rather than in genius, the case of the rich republic that had the science and the liberty but not the industry, and why the fiercest disagreement among the experts is itself the strongest evidence against the flattering answer

PART V · The Counterweights a Ruler Cannot Own The second divergence examined through a single variable — whether a society contains centres of power the man at the top does not control — a near-controlled experiment between two neighbours that isolates the variable, the case of the civilisation that bought up every such centre and so could only ever crown a new master, and the famous settlement in which a king was finally made to pay for breaking faith

PART VI · One Variable, Two Outputs How the two divergences turn out to be one structural fact seen from two sides, why a plural order is at once a society of many rooms and many channels and many counterweights while a foreclosed order collapses all three together, and the honest limit of the unification — that plurality is very nearly sufficient for liberty but only necessary, not sufficient, for industry

PART VII · The Test the Thesis Must Pass The decisive experiment stated in advance, the prediction on which the structural account and the flattering account differ absolutely, and the record of populations that fell centuries behind and then closed the gap inside a single working life — too fast for anything but a change in the arrangement

PART VIII · The Strongest Objection, and the Discipline The best case the other side can make once crude racial theory is set aside, why the sophisticated objections either fail the reversal test or collapse into this volume's own argument, the discipline turned back on the volume's own thesis, and what the structural account does and does not give a reader who hoped it would be consolation

Preface

This volume can be read by someone who has never encountered the framework it belongs to or any of its companion studies, and it is written so. Every term it relies on is defined where it first appears; every historical case is described rather than merely named; and where it draws on the work of a particular scholar, it pauses to say who they were and what they argued, so that the reader need not take the citation on trust.

Its subject is a single question, old and dangerous in equal measure. Two transformations remade the modern world — the industrial harnessing of mineral energy, and the slow binding of rulers by law and the slow widening of the vote — and on the map they cluster in one corner of the world across a few generations. The oldest and most natural explanation for that clustering is that it reflects the people who live there: that the engines and the constitutions express some superiority of mind or temperament or race in their makers. That explanation has never wanted for believers, and it did, for centuries, the ugly work of excusing conquest and enslavement by assuring the conqueror that what he could take he was fit to take.

The volume sets out to show that the question has a better answer, and to show it in a way that could be wrong. The better answer is structural: the clustering was produced not by superior people but by an arrangement of positions — by what each person was formed to value before they could weigh it, by where their society's institutions rewarded their talent to go, and above all by whether their society contained centres of power the ruler did not own. The argument's spine is that a single such variable — the dispersal of power into counterweights a ruler cannot command — lies beneath both transformations at once: it opens the channels through which knowledge and industry can grow, and it supplies the counterweights through which liberty widens, so that its presence loosed both and its foreclosure suppressed both together.

An argument of that kind earns nothing if it cannot fail, and so the volume binds itself to a discipline it keeps throughout and names at the close: to state the prediction on which the structural account and the flattering one differ, and then to run the test. They differ on reversal. If the difference lay in the people, a people that fell behind should stay behind; if it lay in the arrangement, a fallen-behind people should be able to catch up within a single lifetime, because nothing about the people ever needed to change. The record contains the experiment, run several times. The volume's seventh part runs it. Everything before is the work of stating the mechanism precisely enough that the running of it means something.

PART I

The Question and the Answer That Flatters

How two transformations that remade the species clustered in one corner of the world, why the most natural explanation for that clustering is also the most dangerous, and what a structural account would have to do to earn belief

I. Two Transformations and One Map

Two things happened to the human species in the long modern centuries that had not happened in the hundred thousand years before, and both, on the map, sit close together. The first was industrial: between roughly 1760 and 1840 a society on a wet island off the European coast learned to drive production with mineral energy instead of muscle, wind, and wood, and the output of cloth, iron, and motive power leapt to a scale no prior civilisation had touched. By the middle of the nineteenth century that one society was making something close to half the world's iron and cotton cloth and burning something close to half the world's mined coal. The second was political: across the same north-western corner of Europe and the settler societies it seeded, a particular arrangement of government slowly hardened — rulers bound by law they could not simply rewrite, courts they did not fully own, presses they could not wholly silence, and, by stages stretched over generations, a franchise that widened until most adults could vote. Industry and a certain kind of liberty: two revolutions, one neighbourhood.

A map that marks where each began invites a single question, and the question has been asked, in one form or another, for two centuries. Why there? Why then? Why not in the places that looked, on paper, better placed — Spain with the silver of the Americas, France with its colonies and its academies, the Dutch Republic with the most advanced commerce on earth, China with an economy in 1700 larger than all of Europe put together? The clustering is real. It is not a trick of the historian's framing. Something concentrated two world-altering changes in one region across a few generations, and the concentration demands an explanation.

II. The Answer That Flatters Its Authors

There is an explanation that has never wanted for believers, and it has the great advantage of being the first one that occurs to the people who benefit from it. The explanation is that the cluster reflects the cluster's inhabitants — that the people who built the engines and wrote the constitutions were, in some durable way, better suited to the task: more inventive, more rational, more orderly, more free by temperament, or simply more intelligent. In its crudest form this is the language of racial hierarchy, and it

did real and catastrophic work: it furnished the justification for conquest, enslavement, and empire, supplying the conqueror with the comforting syllogism that what he was able to take, he was fit to take. In its more respectable forms it speaks not of blood but of national character, of a people's genius, of a civilisation's spirit — but the structure of the claim is the same. The achievement is read back into the achievers as a property they carried inside them.

This volume's first commitment is to take that explanation seriously enough to refute it rather than merely to deplore it, because deploring it has never made it go away. It returns, in each generation, in new vocabulary, because it answers a real question with a satisfying shape: the winners won because of what they were. The burden this volume accepts is to show that the question has a better answer — one that fits the evidence more closely and, unlike the flattering answer, survives being tested against the cases where it should break.

III. What a Structural Account Must Do

The alternative this volume will build is structural. Its claim, stated once and plainly so the reader can hold the project to it, is that the clustering of industry and liberty was produced not by superior people but by a particular arrangement of positions — by where human beings stood in their societies, what those positions rewarded and punished, what each person was formed to want before they could weigh the wanting, and above all by whether the society contained centres of power that the man at the top did not own. The same human material, the argument runs, will produce liberty where one structural condition holds, industry where another holds, both where they hold together, and neither where a ruler has foreclosed the ground on which either could grow.

An account of that kind is worth nothing if it cannot fail. The easiest thing in the world is to wave at "structure" or "institutions" after the fact and declare every outcome explained; an explanation that fits every possible result explains none of them. So the volume binds itself, from the start, to a discipline it will name at the end and apply throughout: it must state what evidence would defeat it, and then go looking for that evidence rather than away from it. The flattering answer — superiority of the people — makes a prediction the structural answer does not: if the difference lay in the people, then a people that fell behind should stay behind, because you cannot change a population's nature in a generation. The structural answer predicts the opposite — that a society which "lacked" industry should be able to acquire it within a lifetime once its arrangement of positions changes, because nothing about the people needed to change at all. The two accounts make opposite predictions about reversal, and the historical record contains the decisive experiments. The volume will run them in its seventh part. Everything before that is the work of stating the mechanism precisely enough that the test means something.

PART II

The Instrument — People in Positions

The mechanism the rest of the volume runs on, stated for a reader who has never met it: how a person decides with the materials at hand, how what they were formed to value sets the price of every choice, how cost counts only where someone can enforce it, and the three structural facts those simple rules expose

I. A Person in a Position

The whole of this volume rests on a mechanism small enough to state in a sentence, and the sentence is deliberately undramatic. A human being occupies a position in some structure — a peasant under a landlord, a merchant under a crown, a scholar before an examination, a king facing a rival — and that position presents him with a menu of possible actions and a set of circumstances simply there in front of him, and he chooses among the actions by weighing what each would gain him against what each would cost him. There are no laws of history pulling him along, no economic forces acting over his head, no class consciousness descending on a million minds at once. There are only people, in positions, deciding. When this volume says a society did something, it is always shorthand for a great many people in similar positions making similar calculations, and the shorthand should never be mistaken for a mind of its own.

The plainness is the point, because two small additions turn the sentence from a slogan into an instrument that can be wrong — which is the only kind worth having.

II. The Furniture in the Room

The first addition concerns the word *gain*. A choice is weighed against what the chooser values, and what a person values is not chosen freely from nowhere; it is installed in him, early, by the world that raised him, before he has the critical capacity to weigh it. Call this *formation*. A useful way to picture it is a room. A person can only think with, talk about, and act upon the furniture that is in the room he was raised in — the concepts, the categories, the heroes, the senses of what is honourable and what is shameful, what counts as success and what does not even register as a question. He did not select the furniture. It was there when he arrived, and it feels not like a set of positions he has taken but like the plain shape of reality itself. This is why the instrument can price the believer and the martyr without calling either irrational: a man who values his soul's salvation above his life is making a perfectly sound calculation given the furniture in his room; the furniture, not the arithmetic, is what differs from the unbeliever's.

Formation is also what makes the flattering answer of the first part so hard to dislodge, because formation is invisible to the formed. A society that has installed, in every educated child, the sense that a certain kind of achievement is the highest a human can reach will produce adults who pursue that achievement and experience the pursuit as the free expression of their own gifts rather than as the predictable output of the room they were raised in. The room does its work precisely by not being seen as a room.

III. Cost Counts Only Where It Is Enforced

The second addition concerns the word *cost*. A cost enters a person's calculation only if it is credibly likely to fall on him. A penalty that exists on paper but is never enforced, a rule that no one with power cares to apply, a promise extracted from a ruler who can break it the moment it inconveniences him — these are not costs, and a clear-eyed actor does not price them. This single qualification, dull as it sounds, turns out to carry an enormous amount of the volume's weight, because it is the hinge between the two halves of the whole inquiry. A ruler who can be made to pay for breaking faith behaves differently from a ruler who cannot, and what makes the difference is whether there exists, somewhere in the society, a centre of power able to impose the cost — a court that can rule against him, a creditor who can refuse him the next loan, an assembly that can withhold the next tax, a press that can turn his subjects against him. The whole question of liberty, this volume will argue, is at bottom the question of whether such centres exist; and the whole question of liberty is therefore the question of cost, restated as arithmetic.

IV. Three Facts the Instrument Exposes

From those simple rules three structural facts follow, and the reader should hold all three, because the rest of the volume is their elaboration.

The first is *convergence without conspiracy*. People in similar positions, watching one another and copying what visibly works, drift onto the same path without ever agreeing to, without ever becoming conscious of themselves as a group. From the outside the result can look exactly like a class acting in concert to a plan; from the inside there is no plan and no collective mind, only a thousand separate people each finding that the same move pays. Much of what gets narrated as the design of an elite is convergence of this kind, and the volume will be careful not to grant a committee where the evidence shows only a crowd of similar calculators.

The second is *the institution that thinks for itself*. An institution selects the people who fill it — an examination admits those who master its syllabus, a guild admits those trained in its craft, a church promotes those who profess its creed — and across generations the selection compounds, until the institution is staffed entirely by people whose formation and position incline them the same way, and the institution's logic is then lived out by everyone in it and consciously held by no one. A society's deepest tendencies often live here, in the staffing of its institutions, below the level at which anyone is choosing them.

The third is *the channel*. Because talent goes where its position rewards it, and because positions and their rewards are set by a society's institutions, the question of where a people's ablest minds end up is answered not by the distribution of ability — which there is no reason to think varies much from one large population to another — but by the shape of the channels the society has built. This is the fact that does the work in the volume's middle parts, so it is worth stating in its strongest form: a society does not get the

geniuses it deserves; it gets the geniuses its channels point somewhere useful, and loses the rest to whatever its channels happen to reward.

PART III

Where the Talent Is Allowed to Go

The first divergence examined through the channel: how China's examination absorbed its ablest minds for thirteen centuries, how the Islamic world's great age of inquiry was redirected by an institution rather than ended by a defeat, how England built a channel that pointed talent at the natural world and crowned it, and a living case in which one population runs two channels at once

I. The Null Hypothesis Stated Honestly

If the difference between the societies that produced modern science and those that did not lay in the raw supply of able minds, the historical record would show it, and it does not. China produced, centuries before Europe, paper and printing and the magnetic compass and gunpowder and cast iron at industrial volume; in the eleventh century the scholar Shen Kuo, a Song-dynasty official, compiled a notebook of natural observations — on magnetism, on fossils, on astronomy — whose range and acuity matched anything written in Europe for another five hundred years. The Islamic world, across the ninth to eleventh centuries, ran ahead of Europe in mathematics, astronomy, optics, and medicine by a clear margin. The point is not to award medals; it is to establish the null hypothesis from which this volume reasons. Able minds appear in every large population at something like the same rate, and the historical variation in scientific output cannot be explained by their supply. What varies is not the minds but where the minds are sent.

II. China: The Channel That Pointed Inward

The Chinese imperial examination — the *keju* — is the clearest case in the record of a channel directing a civilisation's talent, and it is worth describing precisely, because the comparison turns on what it did and did not do. The system was a vast meritocratic apparatus for recruiting the men who would staff the imperial bureaucracy. Systematised under the Sui dynasty at the end of the sixth century, developed under the Tang, brought to mature form under the Song, and operated with modifications by the Ming and the Qing until its abolition in 1905, it ran for roughly thirteen centuries — a continuity no Western institution this volume discusses can approach. It tested at ascending levels, district to province to capital to the palace itself, and the men who passed at the top were given the senior administrative posts through which a fifth of humanity was governed.

The decisive feature is the syllabus. After the system's consolidation under the Song, the examinations were confined largely to the Confucian classics — the Four Books and the Five Classics — studied through the accepted commentaries and written up, in the Ming and Qing, in a rigidly prescribed form known as the eight-legged essay. A boy of exceptional ability, born anywhere in the empire, faced a channel of immense prestige and material reward whose entire content was the literary and ethical inheritance of the classical tradition, and not the systematic investigation of the natural world. The channel did exactly what a channel does. It absorbed, generation upon generation, the ablest young men into the mastery of the canon, and the natural-philosophical work that had flourished in the Song was not so much forbidden as orphaned — left without an institution that recruited for it, rewarded it, or carried it forward. The historian Joseph Needham, an English biochemist who spent the second half of his life documenting Chinese science and asking why modern science had nonetheless emerged in Europe rather than in China, gave the puzzle its enduring name; the answer this volume offers to the Needham question is not that China lacked minds but that its grandest channel pointed them at the throne's administration rather than at the workings of nature.

III. The Islamic World: A Redirection, Not a Defeat

The second case refutes a lazy story — that great ages of inquiry simply burn out, or are killed by conquest — and replaces it with the more exact and more useful finding that a channel can be re-pointed by an institution. Under the early Abbasid caliphs at Baghdad, and above all under al-Ma'mun, who reigned from 813 to 833, the translation of Greek, Persian, and Indian learning into Arabic was organised and funded, and the inquiry it seeded produced figures whose names survive in the very vocabulary of the fields they advanced: al-Khwarizmi, whose work on equations gave Europe the word *algebra*; Ibn al-Haytham, whose study of light founded the science of optics; al-Biruni in astronomy and geography; Ibn Sina, whose medical synthesis was the standard text in European universities for five centuries. This was not a flicker. It was a sustained, world-leading enterprise.

What changed was not the supply of minds and not a battlefield. From the late eleventh century a new institution spread across the Islamic world: the *madrasa*, a college endowed for the systematic training of religious and legal scholars. Its model spread with extraordinary speed — the network of colleges founded by the Seljuk vizier Nizam al-Mulk from the 1060s was, in its day, the best-endowed teaching in the world, and its graduates were given priority for the senior judicial and administrative posts. Within a century there were hundreds of madrasas; within four, thousands. The figure most associated with the intellectual side of the shift is al-Ghazali, a senior scholar appointed to Nizam al-Mulk's flagship college, whose critique of the philosophers, written around 1095, argued that the methods of Greek philosophy could not be trusted where they touched on the deepest questions. The scholarly debate over how much al-Ghazali personally caused is real and unsettled, and this volume does not need to settle it; the careful historian George Saliba has shown that astronomical work of genuine originality continued for centuries after him, with a fourteenth-century model later echoed in Copernicus. The institutional point stands regardless of the intellectual attribution. From roughly the twelfth century the most prestigious, best-funded channel for an able young man in the Islamic world recruited for jurisprudence and theology, and the natural-philosophical inquiry of the great age, like the Chinese science of the Song, was left without an institution to carry it. The channel had been re-pointed, and the talent went where it now led.

IV. England: A Channel Pointed at Nature, and Crowned

England's distinction was to build, across a century and a half, a channel that did for natural inquiry what the *keju* did for the classics and the madrasa for the law: it recruited talent toward the study of nature, rewarded it, and — the part that matters most and is most easily missed — crowned it with the highest cultural prestige a society can confer. The institutional spine is well documented. The Royal Society, founded in London in November 1660 and chartered by the Crown two years later, took as its motto a phrase that may be rendered *take nobody's word for it* — a standing instruction to settle questions by examining the evidence rather than by deferring to authority. In 1665 it began the journal now known as the *Philosophical Transactions*, the oldest continuously published scientific periodical in the world, and the journal did something quietly revolutionary: it created a public, dated, indexed record of findings that any later investigator could consult, check, and build upon, converting scattered private discovery into a knowledge that accumulated across generations. Around and beneath the Society grew a wider ecology — the dissenting academies, which schooled the Protestants barred from the universities and taught the modern and applied subjects the old universities neglected; the provincial philosophical societies; and, in time, the mechanics' institutes that carried technical knowledge down to the working population.

But an institution recruits talent only if a society's formation has made the work it recruits for feel like the highest calling, and here England did something the bare institutional history understates. When Isaac Newton died in 1727 he was given a state funeral and buried in Westminster Abbey among kings and generals — the first man so honoured for work of the mind — and the national poet wrote an epitaph casting his discoveries as a second act of divine creation. A foreign visitor recorded, with astonishment, that the English honoured a man of science as his own country honoured a duke. This is formation in the act of being installed. To a gifted English boy of the next generation, the furniture in the room now included the proposition, absorbed before he could weigh it, that the investigation of nature was what genius looked like and what England most prized. His position logic differed from his Chinese or his Ottoman counterpart's not because his mind was different but because his channel ran toward nature and ended, visibly, in the Abbey.

V. The Living Case: One People, Two Channels

The cleanest demonstration that the variable is the channel and not the people is a case in which a single population runs two channels at once and the outputs diverge exactly as the channels point. In the modern State of Israel the ultra-Orthodox Jewish community sustains an information architecture organised wholly around the study of the Talmud — a body of layered legal reasoning as demanding as any intellectual tradition humanity has produced — and supports it with subsidy, exemption, and the full weight of a formation that installs Talmudic mastery as the definition of achievement before a child can question it. That channel produces, predictably, world-class Talmudic scholars and almost no natural scientists. The same broad population, in its secular stream, runs through universities, military research, and a dense technology sector, and produces, just as predictably, a heavy concentration of scientists, engineers, and firms. The minds are drawn from the same well. The water goes where the architecture sends it. No account resting on the quality of a people can survive a case in which one people, differently channelled, yields both outputs at once; only an account resting on the channel can.

The finding of this part is therefore narrow and firm. The first divergence — that modern science and the technical knowledge feeding industry accumulated in one place and not in others — was a divergence of channels, not of minds. But a channel that points talent at nature explains where the knowledge came from. It does not, by itself, explain why that knowledge was built into engines in one particular place and at one particular time, and an honest account must now turn to the leg that the channel alone cannot carry.

PART IV

The Price of a Machine

Why accumulated knowledge does not become an industrial revolution until the prices make a machine worth building, the scholars who locate the cause in wages and coal rather than in genius, the case of the rich republic that had the science and the liberty but not the industry, and why the fiercest disagreement among the experts is itself the strongest evidence against the flattering answer

I. Knowledge Is Not Yet a Machine

A society can accumulate a great stock of natural knowledge and still not industrialise, because building a machine is a decision, made by a particular person in a particular position, and the decision turns on whether the machine pays. An invention is not adopted because it is clever; it is adopted because, for someone facing a real ledger, it costs less than the thing it replaces. This is position logic applied to the inventor and the manufacturer rather than to the scholar, and it is the leg of the argument that the knowledge-centred story of the previous part cannot by itself carry. To see why the industrial revolution happened where and when it did, one must look not only at where the knowledge was but at where the prices made the knowledge worth turning into iron.

II. Allen: High Wages and Cheap Coal

The most influential answer of the last generation belongs to the economic historian Robert Allen, and it is worth stating carefully because it is the purest expression of this volume's own instrument arriving from a different discipline. Allen's claim is that the British industrial revolution was a rational response to a price structure peculiar to Britain: wages there were unusually high and energy — coal — unusually cheap, by comparison with the rest of Europe and with Asia. In that specific environment, a machine that replaced expensive labour with cheap coal-driven power paid for itself quickly, and so it was worth the cost and risk of inventing and installing. In a low-wage, dear-energy economy the same machine was a money-loser, and no rational person built it. The breakthrough technologies — the steam engine, the mechanised cotton mill, the smelting of iron with coal — were, on this account, uniquely profitable to invent and use in Britain, and nowhere else, because only in Britain did the prices reward them. The insight is old in its bones: an economist had observed in the 1930s that a rise in the price of one factor of production is itself a spur to invent ways of using less of it, and the labour-scarce United States of the nineteenth century had

been read the same way. Allen's contribution was to measure the wages and the energy prices and show that Britain sat exactly where the theory predicted an industrial revolution should occur.

What deserves emphasis, because it cuts against tidy stories including some told elsewhere in this project's own corpus, is that Allen is sceptical of two factors a structural account might be tempted to lean on. He largely discounts representative government and the enclosure of common land as engines of growth; the work, in his account, is done by relative prices, themselves the product of Britain's success in global trade and the geological accident of accessible coal. A reader committed to the institutional story should sit with that discomfort rather than wave it away. It is a finding from inside the structural camp that the structural variable doing the most work may not be the one the institutionalist most wants to credit.

III. Pomeranz: Coal and Colonies, and a Sledgehammer

The economic historian Kenneth Pomeranz pressed the material case further and turned it against European self-regard with some violence. Comparing the most advanced region of Europe — England — with the most advanced region of China — the lower Yangzi delta — he argued that as late as around 1750 the two were strikingly alike in living standards, commercial development, agricultural productivity, and the sophistication of their markets, and that both were running into the same wall: a shortage of land, timber, and fuel that threatened to choke off further growth. On this reading there was no deep, long-standing European superiority waiting to express itself; there were two comparably advanced ends of Eurasia approaching the same ecological ceiling. What allowed one of them to break through after about 1800, Pomeranz argued, was two pieces of luck external to any virtue of its people: coal that happened to lie close to where the manufacturing was, and access to the New World, whose land and resources functioned as a vast addition to Europe's own — relieving the pressure on European acres and supplying the raw materials a growing industry consumed. Pomeranz took, in effect, a sledgehammer to the idea of European exceptionalism and to the older notion of a peculiarly capitalist European spirit, and replaced them with geology and a colonial windfall. Whatever its limits — and critics have pressed several, including that Spain and Portugal drew far more direct New World wealth and did not industrialise — his account is, for this volume's purpose, an ally: it locates the divergence in contingencies of place and timing rather than in any quality of a people.

IV. The Case That Bites: The Dutch Republic

The hardest test of any account that credits liberty and science with industry is not China or the Islamic world. It is the Dutch Republic, and an honest volume must meet it head-on rather than hurry past. In the seventeenth century the Dutch had, by a wide margin, the most advanced commercial economy in the world; they had science of the first rank, in the astronomer and physicist Christiaan Huygens and the microscopist Antonie van Leeuwenhoek; they had a religious tolerance and a dispersal of power that gave them *more* of the plurality this volume will shortly argue is the engine of liberty, not less. They were rich first. And they did not industrialise first. If liberty and science and commercial sophistication were sufficient to produce an industrial revolution, the Dutch should have had one, and they did not.

The reason, on the material account, is precisely the one Allen's theory predicts. Dutch wages were high, but Dutch energy was not cheap in the way British coal was cheap: the Republic ran on peat, which was finite and grew dearer, and it had no great accessible coalfield beside its manufacturing. The price structure that made a machine pay in Lancashire did not obtain in Holland, and so the machines that

transformed Britain were, for a Dutch manufacturer, simply not worth building. Had cheap coal sat under the Low Countries, the historians of this school suggest, the first industrial revolution might have been Dutch or German rather than British. The Dutch case is the one that disciplines the whole argument: it shows that the political and intellectual conditions, however necessary, were not sufficient, and that material position did decisive work. A structural account that cannot say this honestly is a revealed doctrine, not a tested one.

V. The Quarrel Is the Evidence

The reader will by now have noticed that the scholars assembled here do not agree. The knowledge-and-institutions account of the previous part and the wages-and-coal account of this one are genuine rivals; a third school, associated with the historian Joel Mokyr, insists that neither prices nor institutions alone will do, and that what set Europe apart was a *culture* of useful knowledge — a community of natural philosophers and skilled craftsmen, spread across borders and corresponding by letter, who came to believe that the systematic understanding of nature could and should be turned to improving the human condition, and who were too numerous and too widely distributed to be explained as a mere response to the right incentives. These are real disagreements among serious people, and this volume does not pretend to adjudicate which factor weighed most; the honest position is that the question remains open and may be multi-causal in a way no single weighting captures.

But the disagreement is itself the finding this part most wants the reader to carry away. Here is a field of experts who have spent their careers attacking one another's explanations of the great divergence — prices against institutions against culture against geology — and not one of the serious contenders explains the divergence by the superiority of a people. They fight, ferociously, over *which structural variable* did the most work. The convergence beneath the quarrel is total and is exactly the convergence the flattering answer cannot survive: the entire weight of the discipline, across schools that agree on almost nothing else, falls on the side of the arrangement rather than the blood. A thesis that its sharpest internal critics cannot push toward the flattering answer, even while demolishing each other, is a thesis that has been tested hard and held.

PART V

The Counterweights a Ruler Cannot Own

The second divergence examined through a single variable — whether a society contains centres of power the man at the top does not control — a near-controlled experiment between two neighbours that isolates the variable, the case of the civilisation that bought up every such centre and so could only ever crown a new master, and the famous settlement in which a king was finally made to pay for breaking faith

I. What Liberty Reduces To

The liberty this volume is concerned with is not a feeling or a value but an arrangement, and the arrangement reduces to the dull arithmetic of the second part: liberty is what exists when a ruler can be made to pay for breaking faith, and a ruler can be made to pay only where some centre of power exists that he does not own. Call these centres *counterweights*: courts that can rule against him, an assembly that can refuse him the next tax, creditors who can deny him the next loan, a church he does not appoint, merchants whose wealth he cannot simply seize, a press he cannot wholly silence, associations that can coordinate a refusal. Where such counterweights exist, the pressure that builds in any society — the grievances of the excluded, the ambitions of the rising — finds channels through which it can be released a little at a time, as concession, as reform, as a widening of who is allowed to bargain; and liberty widens by increments, each one a cost the powerful agreed to pay because refusing would have cost them more. Where the counterweights have been foreclosed — where the man at the top owns, directly or through his apparatus, every centre from which a cost might be imposed — the pressure cannot be released in small amounts, because there is no one with standing to negotiate its release. It stores. And when it finally breaks, it breaks all at once, in a rupture that destroys the ruler but, finding no surviving counterweight to build on, simply installs a new ruler in the same shape.

II. A Near-Controlled Experiment

History rarely offers a controlled experiment, but two Scandinavian neighbours come close enough to isolate the variable, and the comparison is worth setting out because it strips away almost everything except the one thing that matters. Norway and Sweden shared, by the early nineteenth century, the same Protestant creed, the same church-run machinery of near-universal literacy, and — after 1814 — the same king. They differed in one structural respect. Norway had almost no native aristocracy; four centuries of Danish rule had left it with a class of salaried officials and a free, literate, landowning peasantry, and when

its elite wrote a constitution in 1814 in the universal language of the age, the franchise it set was already among the widest in Europe. Sweden had what Norway lacked: a real aristocracy and a wealth-weighted vote so steep that at the local level a single rich man might cast dozens of votes and companies voted as well.

The same mechanism ran in both, and it ran on the same timetable adjusted only for the one variable. In Norway, where positions were widely distributed and the counterweight to any would-be master was broad, the widening came early and fast: parliamentary government by the 1880s, manhood suffrage by the end of the 1890s, votes for women in 1913 — the first sovereign state to grant them. In Sweden, where a real aristocracy held the positions and weighted the vote toward wealth, the identical mechanism ran a full generation slower, the decisive concession arriving only in 1918, with revolution visible across the water and the cost of refusal suddenly, vividly real. Same creed, same words, same literacy, same king; different distribution of positions; different timetable, identical destination. The pair isolates the variable as cleanly as history allows, and the variable is not culture and not character. It is the ground — the distribution of counterweights — and the ground sets the clock. Both societies, it should be added, ran a valve that bought the bargaining time: a fifth of Norway and a sixth of Sweden simply left, for America, draining away decade by decade the very class whose counterparts elsewhere manned the barricades, and converting what might have been rupture into the slow work of concession.

III. China: The Channel That Foreclosed the Ground

Return now to the examination system of the third part and see it from the other side, because the *keju* did two things at once and the second is what bears on liberty. It pointed talent inward, away from nature — that was the first divergence. But by making mastery of the imperial canon the one road to wealth, status, and security, it also drew every ambitious family's sons and savings into the state's own ladder, and in doing so it dissolved, generation after generation, the very centres from which a counterweight to the throne might have grown: the independent merchant estates, the self-governing cities, the autonomous church, the separate body of law. Why endow a monastery or a guild or a civic corporation when the only ladder that led anywhere led up through the examinations and into the emperor's service? The system did not need to suppress the counterweights by force; it bought them up, by offering their potential builders a better return inside the state than outside it.

The consequence shows most sharply in what the Chinese tradition did with its own most dangerous idea. The canon contained, sealed into it for two millennia, a genuinely revolutionary proposition — that Heaven's mandate to rule was conditional on the ruler's virtue and could be withdrawn, that a tyrant forfeited his claim and might justly be removed. Every educated man memorised it. It was, in the vocabulary of this project, a loaded word of the first magnitude, a licence to depose. And yet across two thousand years it could only ever crown. Because the ground had been foreclosed — because there existed no surviving merchant estate, no independent city, no separate church, no autonomous law from which the dangerous idea could be fired at the throne *incrementally*, as a demand for this reform and then that one — the licence to depose could be exercised only in the one way the foreclosed ground left open: by toppling the whole structure and raising a new emperor in the same place. The pressure stored, ruptured, and reloaded the identical shape, dynasty after dynasty, the universal idea forever available and forever unable to do anything but replace one master with another. The same examination that orphaned Chinese science also orphaned Chinese liberty, and by the same mechanism: it owned the ladder, and so it owned the ground.

IV. England: A King Made to Pay

Set against the foreclosed ground, the English settlement of 1688 can be seen for what it structurally was. When Parliament and its allies replaced one king with another on terms the new monarch had to accept, the economic historians Douglass North and Barry Weingast argued in a celebrated study, the lasting achievement was not a change of person but a change in what a ruler could credibly be held to. The institutions that emerged — a Parliament that controlled the purse, courts the crown could no longer simply override — meant that the king could now be made to pay for breaking faith, and in particular could be trusted not to seize his subjects' property or repudiate his debts on a whim. The evidence they pointed to was the capital market: lenders who would not finance an untrustworthy crown financed a constrained one at falling rates, and the state's ability to borrow, and so to act, expanded enormously. A ruler bound is a ruler who can borrow, because a promise that can be enforced is a promise worth lending against.

The discipline of this volume requires noting at once that the thesis is contested, and instructively so. Critics observe that English property rights were already reasonably secure centuries before 1688, that some of the relevant economic acceleration predates the settlement, and that the account carries a faint whiff of a triumphal national story written backward from its happy ending. These are fair cautions, and the volume holds the 1688 thesis loosely rather than leaning its full weight on it. But the cautions do not touch the structural point, which is more general than any single date. England was a society thick with counterweights — a common law with its own institutional life, a Parliament with a real grip on taxation, an independent commercial class, a church no longer simply an arm of Rome — and a ruler embedded among counterweights of that kind is a ruler who must bargain, which is to say a ruler under whom liberty can widen by increments rather than only by rupture. What 1688 produced, it should be said plainly to a reader who might mistake it, was not democracy; it was a constitutional order run by a narrow propertied class, and the widening of the vote to most adults took two further centuries of pressure and concession. But the *machinery* of widening — the existence of centres of power that could impose a cost and so force a bargain — was in place, and that machinery is the second structural variable this volume has been tracking.

PART VI

One Variable, Two Outputs

How the two divergences turn out to be one structural fact seen from two sides, why a plural order is at once a society of many rooms and many channels and many counterweights while a foreclosed order collapses all three together, and the honest limit of the unification — that plurality is very nearly sufficient for liberty but only necessary, not sufficient, for industry

I. The Same Fact From Two Sides

The volume has tracked two divergences through two parts, and it is now possible to show that they are not two facts but one. The first divergence was about channels: where a society's talent was allowed to go, and whether any channel pointed it at the open investigation of nature. The second was about counterweights: whether a society contained centres of power the ruler did not own, through which pressure could be released as reform. Place these side by side and the deeper structure appears, because the thing that produces independent channels and the thing that produces counterweights are the same thing — the dispersal of positions away from a single owning centre.

A society in which power, wealth, status, and the means of inquiry are dispersed among many hands the ruler cannot command is, by that very fact, a society of many rooms — many distinct formations, many places where a different kind of furniture might be assembled and a heterodox thought entertained. It is a society of many channels — many institutions, not all controlled by the state or a single church, any one of which might come to recruit and reward a new kind of work, such as the investigation of nature. And it is a society of many counterweights — many centres able to impose a cost on a ruler and so to force the bargaining through which liberty widens. Plurality is not three conditions that happen to travel together. It is one condition with three faces. The dispersal that gives a society its courts and its independent merchants is the same dispersal that gives it its Royal Society and its dissenting academies, because a Royal Society is precisely a centre of inquiry that the crown endorsed but did not own, and a dissenting academy is precisely what a society produces when it has rooms the established church cannot reach into.

II. Foreclosure Collapses All Three at Once

The Chinese case, read this way, stops being two coincidental failures and becomes one structural fact. The examination system did not separately orphan Chinese science and orphan Chinese liberty by two different mechanisms that happened to land in the same place. It did one thing — it owned the ladder,

drawing every ambitious family into the state's single channel — and that one thing collapsed all three faces of plurality together. It collapsed the rooms, because the formation of every educated man ran through the one canon. It collapsed the channels, because no institution outside the state grew prestigious enough to recruit talent toward anything the state did not reward. And it collapsed the counterweights, because the merchant estates and cities and churches and bodies of law that might have imposed a cost on the throne were never built, their potential founders having taken the better return inside the apparatus. A single act of foreclosure produced, two centuries of inquiry orphaned and two millennia of liberty foreclosed, by the same stroke. This is why the two divergences map onto the same societies. They are not correlated outcomes. They are one outcome, observed twice.

III. The Honest Limit

A unification that claimed too much would be a revealed doctrine, and the previous part has already supplied the evidence that disciplines this one. Plurality is very nearly sufficient for the liberty output: where the counterweights exist, the bargaining happens and liberty widens, on a timetable set by how the positions are distributed — the Norway–Sweden pair shows the mechanism running cleanly, fast on the level ground and a generation slower on the steeper. But plurality is *not* sufficient for the industry output, and the Dutch Republic is the standing proof. The Dutch had the rooms, the channels, and the counterweights in abundance — more of all three than Britain, by most measures — and they did not industrialise first, because the second great input to industry was not political at all. It was the price of a machine, and the price of a machine turned on the cost of energy, and the cost of energy turned on whether cheap coal happened to lie beside the manufacturing. Plurality opens the channel through which the knowledge can accumulate and protects the property through which the capital can be raised; it does not put coal in the ground.

So the exact and defensible form of the unification is this. The single structural variable — the dispersal of positions, the existence of counterweights a ruler cannot own — is necessary for both outputs and very nearly sufficient for one of them. Liberty follows from plurality fairly directly, because liberty just is the bargaining that counterweights make possible. Industry requires plurality and something more — a material position, a price structure, that plurality neither guarantees nor supplies. The flattering answer is refuted by either output, because neither the channel nor the counterweight nor the coal seam is a property of a people. But the two outputs are not symmetric, and an account that pretended they were would be claiming a tidiness the evidence denies. The volume claims the unification and states its limit in the same breath, which is the only honest way to hold a thesis one believes.

PART VII

The Test the Thesis Must Pass

The decisive experiment stated in advance, the prediction on which the structural account and the flattering account differ absolutely, and the record of populations that fell centuries behind and then closed the gap inside a single working life — too fast for anything but a change in the arrangement

I. The Prediction They Do Not Share

The flattering answer and the structural answer agree about the past — both can point to the map and say *here is where it happened* — and they have been able to coexist for two centuries partly because agreement about the past is cheap. The test that separates them is a prediction about reversal, and on this they do not agree; they cannot both be right. If the divergence rested on the quality of a people — on intelligence, temperament, or some inherited disposition toward invention or freedom — then a people that fell behind should stay behind, because the one thing you cannot do in a generation is change the nature of a population. Inheritance moves on the timescale of many lifetimes; it does not switch on when a government changes its policy. So the flattering answer predicts that the gap, once opened, should be sticky, closable only over the very long run if at all. The structural answer predicts the opposite, and predicts it sharply: a society that "lacked" industry should be able to acquire it within a single working life once its arrangement of positions changes — once a channel is built that points talent at the new work, once property is secured well enough that capital will commit, once the society plugs into the prices and the knowledge that already exist in the world — because on the structural account *nothing about the people ever needed to change at all*. The minds were always there. Only the arrangement was missing, and an arrangement can be built fast.

The two accounts thus make opposite predictions about the same observable thing — the speed at which a fallen-behind society can catch up — and the historical record contains the experiment, run several times, with the same result.

II. The Experiment, Run Five Times

Japan ran it first. A society that had been deliberately closed and was, by the standard Western measure of the 1850s, "behind," set about rebuilding its institutions from the 1860s and within a few decades had become the only industrial power outside Europe and the United States — the same people, a new arrangement, the gap of a supposed civilisational age closed inside two generations. It ran the experiment

again after the catastrophe of total defeat: from the 1950s a flattened Japan grew at rates near ten per cent a year through the 1960s and became the world's second-largest economy by the 1980s. Then the smaller economies of the region ran it — South Korea, Taiwan, Hong Kong, Singapore — sustaining growth on the order of seven and a half per cent a year for three decades from the 1960s, carrying populations that had been among the world's poorest into the ranks of the developed inside a single lifetime.

And then the largest experiment in the history of the species was run by the very civilisation whose foreclosure this volume has used as its central case. After 1978 China changed its arrangement — securing enough property, opening enough channels, plugging into enough of the world's prices and knowledge — and its economy grew roughly forty-fold over the following four decades, the fastest sustained transformation of human material conditions ever recorded. It became the world's second-largest economy by the conventional measure around 2010, and by the measure that adjusts for what money actually buys it became the largest economy on earth, surpassing the United States, around 2014, a position it still holds. The civilisation that "did not industrialise until the twentieth century," in the older telling, industrialised on a scale and at a speed that no European society ever matched, the moment its arrangement allowed it.

III. The Lead That Reversed Twice

China is the decisive case precisely because it is the one the flattering answer most often reached for, and its full trajectory is fatal to that answer. Read across the long run, China did not merely fall behind and catch up. It *led* — in the Song centuries it ran ahead of Europe in technology, in commerce, in the scale of its industry — and then it fell behind, and then it led again. A trait carried in a people does not switch on in the eleventh century, off in the eighteenth, and on again in the twenty-first. A trait that behaves like that is not a trait of a people at all; it is a feature of an arrangement, appearing and disappearing as the arrangement is built, foreclosed, and rebuilt. The same logic disposes of the cases on the other side: the societies that "led" did not do so by a fixed superiority either, or their lead would not have been catchable, and it was caught — caught so fast that biology cannot be the medium through which it was transmitted, because biology does not move at the speed of a single government's reforms.

This is the test the structural thesis had to pass, stated in advance so that the passing would mean something, and it passes. A people that fell centuries behind closed the gap inside thirty years; a people that led for centuries fell behind and then led again. Neither pattern is available to an account resting on the quality of the people, and both are exactly what an account resting on the arrangement predicts. The flattering answer makes a prediction, the world runs the experiment, and the prediction fails. What the volume asks the reader to notice is not that the structural account is comforting — the next part will insist it is not — but that it is the one left standing when the test is run.

PART VIII

The Strongest Objection, and the Discipline

The best case the other side can make once crude racial theory is set aside, why the sophisticated objections either fail the reversal test or collapse into this volume's own argument, the discipline turned back on the volume's own thesis, and what the structural account does and does not give a reader who hoped it would be consolation

I. The Objection Worth Answering

A thesis is only as strong as the best objection it can survive, and the objection worth answering is not the crude one. Racial theory in its biological form is empirically dead, refuted not by sentiment but by the reversal test of the previous part, and a volume that spent its strength knocking it down would be fighting a corpse. The serious objections come from thoughtful people who reject racial explanation entirely and still believe the divergence reflected something durable about particular societies — something more than the contingent arrangement this volume has described.

The most pointed comes from the economic historian Gregory Clark, who argued that in England, over the centuries before the industrial revolution, the well-off had more surviving children than the poor, so that the descendants of the prosperous steadily filtered down through the social scale, carrying with them — whether by upbringing or, more provocatively, by something heritable — habits of work, patience, and numeracy, until the whole population had been, in his phrase, made over in the image of the middle class. This is the objection that comes nearest to the flattering answer, because it locates the cause in the people, even if it routes it through generations of social selection rather than race. A second objection, from the historian Deirdre McCloskey, locates the cause in ideas rather than prices or institutions: what changed, on her account, was that a society came to grant dignity and honour to commerce and invention, to stop despising the merchant and the tinkerer, and that change in what a society *esteemed* — not its coal or its courts — released the energy that produced what she calls the great enrichment. A third, older line, associated with the historian David Landes, puts the weight frankly on culture — on values, work habits, attitudes to time and risk — as the thing that made some societies fertile for growth and others barren.

II. Why They Fail or Fold

Take them in turn against the discipline this volume has accepted. Clark's account, in its strong form — the form in which the selected traits are heritable — is the one the reversal test was built to break, and it breaks. If the English advantage had been bred into a population over centuries, it could not have been

acquired by other populations in thirty years; but it was, repeatedly, by societies that did no such breeding and had no time for it. A trait that a Korean or Chinese population can manifest at full strength within one generation of changing its institutions was never a bred trait; it was a capacity the arrangement was previously not calling forth. In its weak form — where what filtered down was upbringing and habit rather than biology — Clark's account is not a rival to this volume at all. It is this volume, told about one country: "habits installed by the surrounding society, before the individual could weigh them" is the definition of formation, and "the furniture in the room" is exactly what Clark is describing when he describes middle-class values spreading through a population. The strong form fails the test; the weak form folds into the thesis.

McCloskey's objection folds the same way, and reveals something the volume should be glad to concede. A change in what a society honours — whether it esteems the merchant or despises him, whether it crowns the natural philosopher or ignores him — is not an alternative to this volume's argument; it is one of its two central mechanisms under a different name. To honour commerce is to point a channel at it; to bury Newton among the kings is to install, in the next generation's formation, the proposition that this is what greatness is. McCloskey is describing the channel and the formation with the emphasis on the prestige rather than the institution, and she is right that the prestige matters — this volume said as much of Newton's funeral. Where it would part company is only on her tendency to treat the change in esteem as a first cause that arrives from nowhere; this volume would ask what arrangement of positions made *that* society, and not its neighbour, able to revalue commerce when it did — and would expect the answer to involve, once again, the dispersal of power that let new values grow in rooms the old authority could not reach. Landes's culture-first account meets the same response: "culture," pressed for its content, turns out to be formation plus the things a society institutionally rewards, which is to say it turns out to be structural and changeable, not fixed in a people — and the proof that it is changeable is, once more, the speed of the catch-up, which no stable culture could permit.

III. The Discipline Turned Inward

The same discipline that disposes of the objections must now be turned on the volume itself, because the surest way to betray an argument is to come to love it. The temptation peculiar to a structural account is to become a skeleton key — to explain every outcome, after the fact, by some arrangement of positions, and so to explain nothing, since a theory that cannot fail cannot inform. The protection against this is the one the volume has used throughout: to state in advance what would count against it. So, plainly: this thesis would be in serious trouble if a society could be found that built the channels, dispersed the counterweights, secured the property, and plugged into the world's prices and knowledge, and *still* failed, over a long run, to catch up — for that would suggest some residual difference in the people that the arrangement could not touch. It would be in trouble if catch-up routinely took many generations rather than one or two, for slow catch-up is what the heritable account predicts. And it would be in trouble if the cases of rapid catch-up turned out, on inspection, to share some narrow ancestral commonality rather than only a common change in arrangement. The volume's confidence rests on the fact that the record, so far, runs the other way on all three. But it holds the thesis as tested, not revealed: as a claim that has survived the tests put to it and remains exposed to the next one, not as a truth to be defended against the evidence. The moment a structural account starts treating "it was all structure" as a thing it *knows* rather than a thing it has so far found, it has become the very kind of doctrine — closed, self-confirming, reading every apparent exception as insufficiently understood — that this whole project exists to diagnose in others.

IV. What the Account Does Not Give

It remains to say what the structural account offers a reader who came hoping for consolation, because it offers less than such a reader usually expects and something more useful than they hoped. It does not promise that every society will flourish, or that the gaps now visible on the map will close on their own, or that good arrangements arise wherever good people are. Arrangements are hard to build, easy to foreclose, and prone to rot; the counterweights that make liberty possible ossify and are captured, and the channels that point talent well silt up and start rewarding the wrong things. Nothing in this volume guarantees a happy ending, and its companion studies in this project are largely a record of the ways such arrangements fail.

What it does give is the removal of a particular lie, and the lie was never harmless. The claim that the people who built the engines and wrote the constitutions did so because of what they were inside furnished, for centuries, the justification for taking from others what those others were said to be unfit to keep: the conqueror's syllogism, that what I can take I am fit to take, dressed as science. To show that the difference was never in the people but always in the arrangement is to take that syllogism's premise away. It does not make the suffering that was justified by the lie any lighter; the dead of the slave ships and the conquered cities are not made whole by a correction in historiography. But it closes the road by which that suffering was excused, and it returns to every people on the map the same standing: the same animal, in different rooms, its talent going wherever its arrangement has built a channel and stopping wherever its arrangement has foreclosed the ground.

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The image the volume took its title from can now be set down for the last time, earned. Every society that has ever existed has had, in roughly equal measure, the human material — the able minds, the capacity for invention and for self-government — because that material is the species, and the species is one. What it has not had in equal measure is the room: the furniture it inherited, which set what its people could think; the channels it built, which set where their talent was rewarded to go; and the counterweights it did or did not contain, which set whether its pressure was released as reform or stored against a rupture that changed the rulers and not the shape. The question history keeps asking is never which peoples were superior. It is only ever which of them, by luck and by long chains of choices no one made with this end in view, came to live in a room with the right furniture, the right channels, and a master who could be made to pay — and the answer, because it is an answer about rooms and not about blood, is one that any people, given the building of a different room, could come to give.

A Note on Sources

This volume verified its load-bearing specifics against the scholarship rather than asserting them from memory, and a reader who wishes to go further should go to the following.

On why industry came to Britain first, the central modern statement of the price-structure account is Robert C. Allen’s study of the British industrial revolution in global perspective, which argues that high wages and cheap coal made labour-saving machinery uniquely profitable there; the geological and energy

emphasis is developed in the work of E. A. Wrigley on the shift from an organic to a mineral-energy economy. The case that the divergence was late and driven by coal and colonies rather than by any deep European singularity is Kenneth Pomeranz's on the great divergence between China and Europe. The rival account, locating the cause in a culture of useful knowledge and a community of improvers, is Joel Mokyr's. On the political settlement and credible commitment, the classic statement is Douglass North and Barry Weingast's study of seventeenth-century England, which should be read alongside its many critics. On Chinese science and the question that bears his name, Joseph Needham; on the continuity of Islamic science past its supposed decline, George Saliba. The sophisticated objections held in the final part are drawn from Gregory Clark on social selection in pre-industrial England, Deirdre McCloskey on the dignifying of commerce, and David Landes on culture.

The framework and the method are stated in this project's companion papers — the foundational account of how durable orders lay belief over force; the statement of position logic as the mechanism beneath the cases; the study of England's four factors; the study of the institutionalisation of science in England; and the case studies of China, of Norway and Sweden, and of the others — each written, like this one, to stand alone.